

285-7

DEC 30 1917

SOL LUX

INDUSTRIAL LIGHTING EQUIPMENT

Holder-Socket-Reflectors

SCHEDULE
"H"

GEORGE CUTTER COMPANY
SOUTH BEND INDIANA



George Cutter Company

SOLOLUX

Industrial Lighting Equipment

SCHEDULE "H"



Cutter
Holder-Socket-Reflectors
"EASY TO WIRE"
SAVE 75% OF
INSTALLATION COSTS
*R.L.M. STANDARD DOME
STANDARD BOWL AND
ANGLE TYPES.*

Bulletin No. 3360

September 30, 1918

*Prices on material listed in this bulletin supersede all previous lists,
including Catalog 14 and Bulletins 3281, 3282, 3313 and 3337-A*

Manufactured by

GEORGE CUTTER COMPANY

SOUTH BEND, IND., U. S. A.

CHICAGO
28 East Jackson Blvd.
LOS ANGELES
San Fernando Building

DETROIT
426 Ford Building
SAN FRANCISCO
583 Howard Street

NEW YORK
149 Broadway
SEATTLE
522 First Ave. So.

50% more light for 5% additional cost. See page 16.



Cutter **SOLUX** Industrial Lighting Systems

Modern lighting methods as applied to industrial plants may be classified under two heads:

1. Interior lighting, designed to facilitate production at night and on cloudy days when natural light is insufficient.
2. Exterior lighting which includes the methods of lighting now employed for protective purposes.

Both classes of lighting employ the same underlying principles of illumination design, but differ in the methods of application and the type of equipment used. The fundamental principles are:

1. Sufficient intensity of light to facilitate vision without strain and consequent fatigue.
2. Correct distribution of light.
3. Elimination of glare.

Cutter Sol-lux Industrial Lighting Equipment which comprises the distributing apparatus for interior lighting and the fixtures and wiring devices for both interior and exterior lighting, is designed to function according to the latest and best illuminating engineering practice embodying the fundamental principles above mentioned. In addition it gives the service afforded by special features in the design of Cutter equipment. Economy in the initial cost of installation and in maintaining permanently the highest efficiency in illumination is secured by installing *Cutter Industrial Lighting Equipment*.

Cutter Holder Socket Reflectors and Fixtures described in this bulletin comprise only a part of the complete line of Cutter material adapted to Industrial Plant Lighting. Literature describing other products such as "Removable from the Front" Panel Boards and Steel Cabinets, Switches, Plugs and Receptacles, Flood Lighting Projectors, Pulleys and Overhead Line Material, Streethoods and Brackets, Mast Arms, Posts, etc., will be mailed upon request. The services of our lighting experts are at the disposal of those desiring assistance in planning modern and efficient lighting systems.

Interior Lighting

The main object today of providing the best interior lighting in factories, mills, repair shops and industrial plants of all kinds is to increase production for the same or lower cost of labor and overhead, reduce spoilage and accidents, increase the quality of the products and promote contentment among the workmen. Statistics show that if the average expense of five workmen and their supervision equals \$5000.00 annually, the cost of lighting is paid for if it saves only three minutes daily of each man's time—or one-half of one percent of the cost of wages and supervision. Yet it has been proven by extensive tests that good light saves an average of thirty minutes daily per man, resulting in an average increase of five percent.



The Design of Interior Lighting Systems

Obviously, the ideal lighting system for any factory is the one which enables the workmen to perform their duties with the greatest accuracy and speed and with the least eye strain. To be practicable the system should be flexible in operation and moderate in first cost as well as maintenance. The efficiency of the system should be maintained by frequent cleaning of the reflectors.

Cutter Handy Wiring Tables and Illumination Data gives information concerning requirements for and types of good factory lighting, methods of making illumination calculations and rules for designing systems. Our Engineering Service Department will assist in making plans and estimates. Complete designs will be submitted by our Engineering Department when drawings and sketches are sent in with the following information: (1) class of work to be performed in each building or department; (2) dimensions of rooms, height of ceilings, location of windows, girders, shafting, etc.; (3) location of machinery, work benches, etc.; (4) color of walls, and (5) whether conduit or open wiring is to be installed.

Elimination of Glare

Glare is one of the most harmful conditions to be encountered in artificial lighting. Men who are permitted to work in glaring light are subject to premature fatigue. Glare causes eye-strain, accidents, spoilage of materials, and decreases production.

Direct glare results from mounting a brilliant light source, such as a bare or improperly shaded lamp, in the direct line of vision. This condition may be corrected by shielding the lamp filament or mounting the lighting unit high above the working plane. Reflected glare is the result of bright rays reflected from polished metal, oily surfaces, etc. It may be reduced by diffusing the light so that the intensity directly beneath the lighting unit is not sufficient to cause a correspondingly high intensity reflected from objects on the working plane.

The practical solution of the problem of eliminating glare is to use reflectors which shield the lamp filament from the direct line of vision. In buildings where high mount-



R L M Standard Dome Reflector with Glass Cap Eliminates Direct Glare, Reduces Reflected Glare and Gives a High Intensity of Light

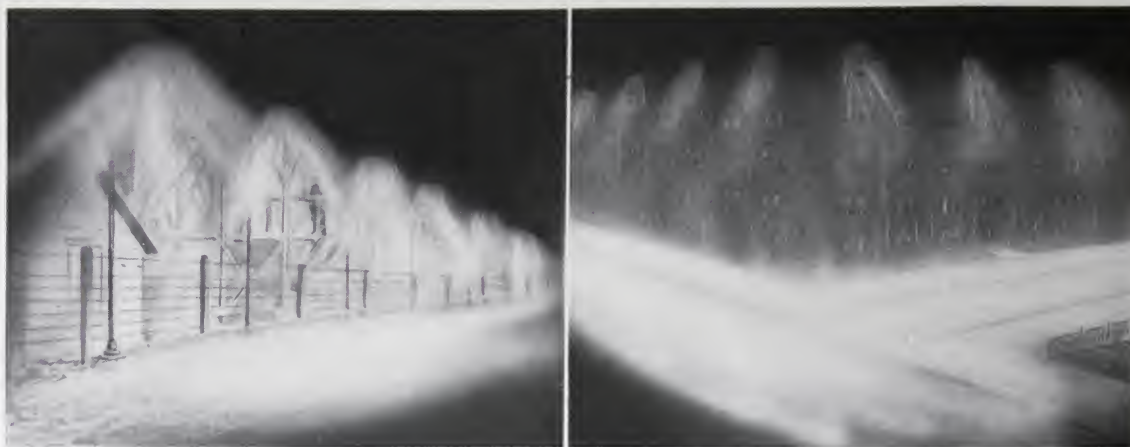
ing heights are possible, bowl type reflectors may be used. In buildings where the ceilings are low, dome type units for general illumination should be installed as close as possible to the ceiling. Cutter Holder-Sockets possess a



The Reflecto-Cap-Diffuser Eliminates both Direct and Reflected Glare

particular advantage for the latter purpose because they allow lamps and reflectors to be installed directly to the conduit. For localized lighting, bowl type reflectors are the most satisfactory.

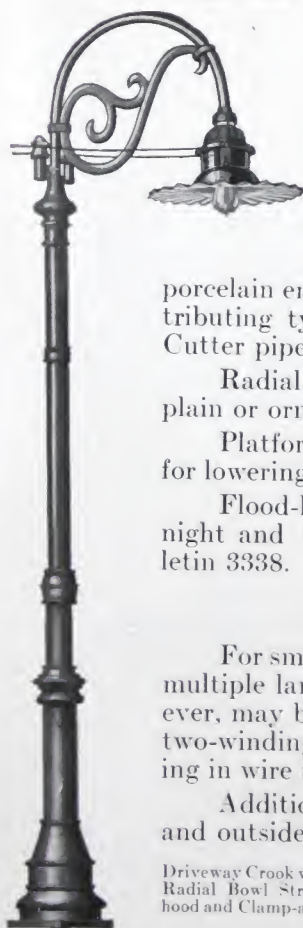
10 91-8211 TEL



Protective Lighting

Although it has been the practice for many years with large industrial plants to provide sufficient illumination on the grounds adjacent to mills and factories to prevent accidents, the application of lighting facilities on an extensive scale for protective purposes is essential during times of war. The following principles should be observed in planning protective lighting systems:

- (1) An object is made visible by the light which comes from it and not by the light which comes from the lamp. The light, therefore, must be directed on the object, or
- (2) An object may be discerned in silhouette, as, for instance, a man in dark clothing may be seen when he is between the observer's eye and a brightly illuminated background.
- (3) Glare must be eliminated for the guard who patrols the premises. Bare lamps should never be used. They should be provided with reflectors or diffusing glassware or both and so mounted on poles or buildings that they are well above the ordinary angle of vision. Reflectors serve the dual purpose of eliminating glare and directing the light where it is most needed.



Driveway Crook with
Radial Bowl Street-
hood and Clamp-arm.

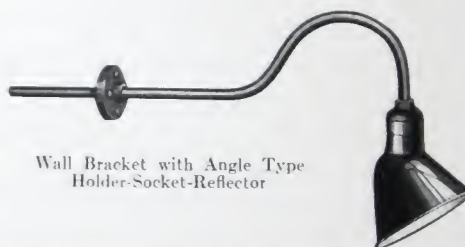
Fixtures for Protective Lighting

The various types of industrial lighting reflectors in porcelain enamel finish—angle, dome (distributing type) and bowl—are used with Cutter pipe brackets and crooks.

Radial bowl streethoods with or without refractors may be suspended from plain or ornamental brackets and mounted on walls or poles.

Platform crooks or pipe standards, equipped with automatic cutout hangers for lowering the fixtures to the ground, are especially adapted to yard lighting.

Flood-lighting projectors are used most successfully for construction work at night and for illuminating objects a considerable distance away. See Bulletin 3338.



Wall Bracket with Angle Type
Holder-socket-Reflector

Distribution Systems

For small areas, where the distance to be covered with the wires is not great, multiple lamps on 110-volt circuits are usually employed. Series systems, however, may be used for circuits covering larger distances. A reactance coil or two-winding transformer is installed in each fixture and thus a considerable saving in wire is effected without the necessity of a regulating transformer.

Additional information regarding Distributing Apparatus for both interior and outside lighting will be furnished upon request.

How to Design Protective Lighting Systems

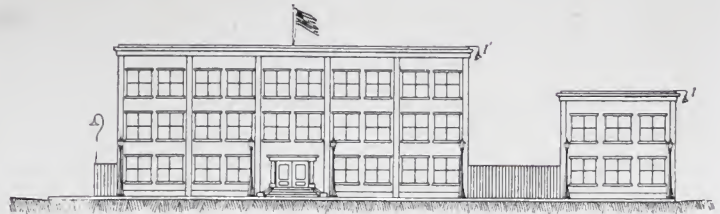
A typical plan for illuminating a factory is shown below. The object of this plan is to show the application of various types of fixtures in their relation to specific conditions, any one or all of which may be present in the vicinity of every industrial plant.

A Cutter CWB projector is mounted on a pole for illuminating zone *a*. Three Cutter CNB projectors are mounted on the roof of the main building for creating zones of light *b*, *c* and *d*. The outside walls of buildings near the alley and the ground adjacent thereto are lighted with 300 - watt lamps in angle reflectors and mounted by means of goose-necks. The same method is used for illuminating the space between the buildings and railroad tracks.

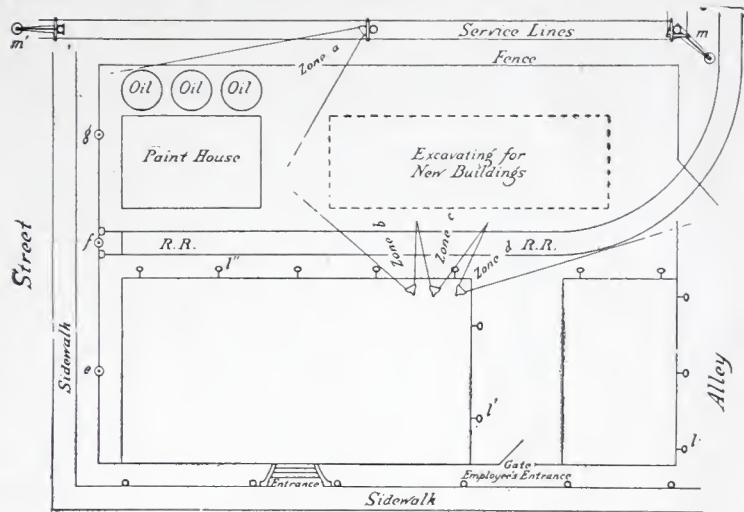
In the front of the factory building, Cutter Arcadian posts with Octagonal tops and Mazda "C" lamps are used for decorative purposes as well as for protective lighting. The expense of such a system is a permanent investment that pays large returns in advertising. Plain swan-neck crooks equipped with dome reflectors are mounted on fence posts on the street side of the plant, as indicated by *e*, *f* and *g*. Mast-arms, *m* and *m'*, support cast iron Pendants, which are a part of the street-lighting equipment.

For plants centrally located in factory districts where the street lighting is not of a high standard, the approach to the building where a zone of light is desired will be confined to the width of the street. In such cases, the lighting units should be mounted high on the building. Angle reflectors are admirably adapted for such purposes. If each lamp is suspended 15 degrees from the vertical, glare will be avoided. Lamps of 100 to 500-watt capacity may be used, the amount of light required depending upon the spacing distance and the color of the surroundings.

Plants surrounded by large areas of unoccupied land may best be lighted by distributing type units suspended from pipe standards. If there are fences, the standards may be fastened directly to the posts. The entire area should be lighted by a general illumination scheme; the intensity of light may be lower than that used for smaller areas adjacent to buildings. These areas should be illuminated in the way described for plants centrally located, but the amount of illumination that is provided should be sufficient for guard service.



Front Elevation of Typical Factory Building

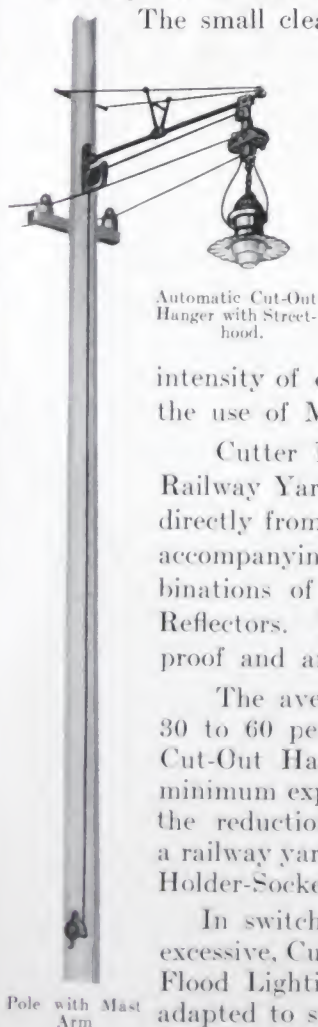


Plan of Factory, Showing Methods of Providing Illumination for Protective and Industrial Purposes



Railway-Yard Lighting

Good illumination is an important factor in railway switching, storage and loading yards. Decreases in the number of accidents and in the costs of switching and loading are arguments in favor of modern lighting systems.



Automatic Cut-Out Hanger with Street-hood.

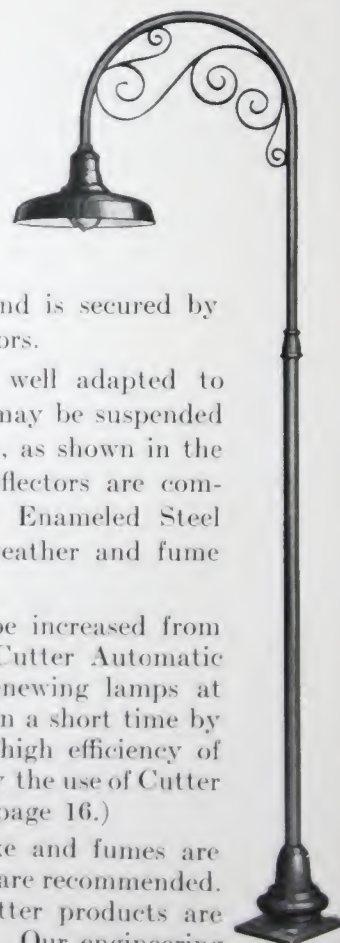
The small clearance between cars in switching yards usually necessitates mast-arm fixtures or the suspension of lamps on cables between poles set at the sides. Lamps should be mounted high to prevent glare; mounting heights vary according to the width of the yards and their general features, as well as the sizes of lamps used. An intensity of one-quarter to one-half foot-candle produces good results.

In storage and loading yards, an intensity of one-fourth candlepower is recommended and is secured by the use of Mazda "C" lamps with Dome type reflectors.

Cutter Holder-Socket-Reflectors are particularly well adapted to Railway Yard Lighting. (See pages 8 and 9.) They may be suspended directly from Mast-Arms, poles, brackets and pole-tops, as shown in the accompanying illustrations. Cutter Holder-Socket Reflectors are combinations of Holder-Sockets and One-Piece Porcelain Enameled Steel Reflectors. They are easy to wire and install, are weather and fume proof and are easily cleaned.

The average illumination of railway yards may be increased from 30 to 60 per cent by keeping the reflectors clean. Cutter Automatic Cut-Out Hangers facilitate cleaning reflectors and renewing lamps at minimum expense. The cost of these devices is saved in a short time by the reduction in maintenance expense. The initial high efficiency of a railway yard lighting system is assured continuously by the use of Cutter Holder-Socket-Reflectors and Cut-Out Hangers. (See page 16.)

In switching yards and round houses, where smoke and fumes are excessive, Cutter Vapor-Proof Fixtures listed on page 14 are recommended. Flood Lighting Projectors, Streethoods and other Cutter products are adapted to special railway yard lighting requirements. Our engineering service is available for solving complicated problems and assisting in the selection of the proper equipment for each particular requirement.



Platform Crook with Dome Type Holder-Socket Reflector.



Cutter SOLOLUX Industrial Lighting Reflectors

The functions of a reflector are to properly redirect and diffuse the light from the lamp and to shade the brilliant filament. "Sol-lux" Reflectors are designed according to the latest and best illuminating engineering practice and give types of light distribution which have been found by exhaustive tests in laboratories and in service to be the most suitable and efficient for all lighting installations to which metal reflectors are adapted.

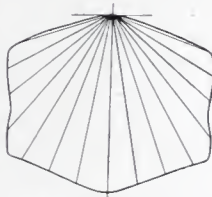
Types of Distribution

R L M Standard Dome Type Reflectors are designed particularly for general illumination. They are used in large factory rooms, warehouses, etc., especially where ceilings are low, and may be used to advantage for general illumination supplementing localized lighting. The correct mounting height above the working plane is three-fifths the spacing of outlets.

Standard Bowl Type Reflectors are designed to concentrate the light over limited areas. When high mounting heights are possible, the larger sizes are used for illuminating extensive areas. The smaller sizes are used for localized lighting where high intensity is desired on a limited area and where economy in energy consumption may be effected by installing lamps of low wattage near the working plane. For uniform general illumination, bowl reflectors should be mounted at a height equal to four-fifths the spacing of outlets.

Angle Type Reflectors are designed for use when the lamps cannot be suspended directly over the areas to be illuminated. The correct mounting height is four-fifths the spacing of outlets.

Focusing Type Reflectors are designed for localized lighting where a high intensity is required over a small area. The mounting height is one and one-half times the spacing of outlets.



R.L.M. Standard Dome Type



Standard Bowl Type



Standard Angle Type



Focusing Type

Reflector Finishes

Porcelain Enamel Finish—"Sol-lux" porcelain-enameled reflectors are surfaced with three coats of enamel; the first is a binding coat, and the next two coats are of the best quality of pure white porcelain enamel for the interior and of a dark green porcelain for the exterior. Cutter porcelain enamel finish has been proven to be superior for mechanical strength and reflecting qualities—a high degree of light diffusion is obtained with a minimum amount of absorption.

Paint Enamel Finish consists of three interior and two exterior coats of paint smoothly applied and baked on at a high temperature. This finish is durable and permanent in color.

Enam-aluminum Finish consists of three interior and two exterior coats. The final interior coat is a transparent, washable enamel that is baked over and protects a highly efficient reflecting coat of matte aluminum. This surface does not collect dirt readily and can be cleaned easily.

KEY TO TRADE NUMBERS

Trade numbers for reflectors consist of six digits. The following table is a guide:

FIRST DIGIT FINISH	SECOND DIGIT HOLDER	THIRD DIGIT TYPE	FOURTH, FIFTH AND SIXTH DIGITS SIZE OF LAMP
1—Paint Enamel	1—Snap Ring Holder	3—Shallow Dome	040-40 Watt
2—Enamel Aluminum	2—2 1/4 inch Heel	4—Angle Type	060-60 Watt
3—Porcelain Enamel	3—3 3/4 inch Heel	5—Focusing	075-75 Watt
	6—Separable Spring Wire Holder for Porcelain Socket	6—R.L.M. Standard Dome	150-100-150 Watt
	0—One piece Reflectors only for use with Holder Sockets	7—Standard Bowl	200-200 Watt
		8—Flat Cone	500-300-400-500 Watt
			000-750-1000 Watt

Example 326075; 3, porcelain enamel, 2, 2 1/4-inch standard heel; 6, R.L.M. Standard Dome; 075, 75 watt Mazda lamp.

Cutter SOLOLUX Industrial Lighting Fixtures

Holder-Socket-Reflectors

"Easy to Wire"—Guaranteed Weather-Proof



Cutter Holder Socket Reflectors consist of one-piece porcelain enameled steel reflectors fastened securely to the porcelain body of the Holder Socket. Gaskets between the porcelain sockets and reflectors make the fixtures weather proof.

This adaptation of the Cutter "Easy-to-wire" Holder Socket to standard types of one piece reflectors, meets the requirements for heavy duty service fixtures which may be installed and wired with the minimum expenditure of time.

Cutter Holder Socket Reflectors are easy to wire. One complete fixture can be installed by one man in two minutes. Only a few operations are necessary. With the Holder Socket Reflector for attachment to Outlet-Box, the wires are pulled through the vertical openings in the porcelain socket and connected to the terminals. The reflector is then fastened to the socket by means of three screws which engage in bayonet slots in the top of the reflector. The Holder Socket Reflector is attached to conduit in a similar manner. In either case, there are no loose wires to stuff back or washers and lock nuts to adjust. Cutter Holder Socket Reflectors are water tight and have cast iron covers, heavily galvanized and painted. They will not corrode. The Reflectors are insulated from the conduit and the terminals are protected from accidental short circuit.

Holder Socket Reflectors are held rigidly in place and in a level position. The reflectors are in correct position with respect to the lamp filament, thereby securing the distribution of light for which they are designed.

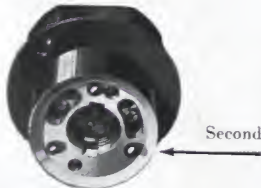
Holder Socket Reflectors insure permanent high efficiency. They are well protected from dust accumulation and the reflectors are easily cleaned.

Holder Socket Reflectors are interchangeable. Reflectors of different types may be substituted at any time and reflectors for medium base and mogul base lamps may be interchanged respectively with medium screw and mogul screw sockets.

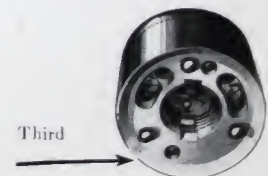
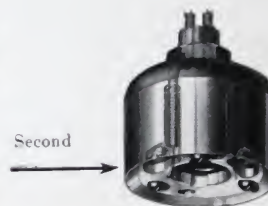
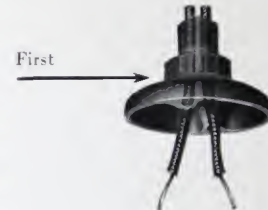
Methods of attachments:—Holder Socket Reflectors may be used on any type of installation and for either interior or exterior lighting purposes. They may be suspended:

1. On 1/2-inch or 3/4-inch Conduit.
2. Directly from the Outlet-Box or Conduit.
3. On chain or cord by using Suspension Eyes.
4. On Reinforced drop cord by using porcelain bushings.

Approved Construction—Cutter Holder Sockets are approved by the National Board of Fire Underwriters.



One-Piece Angle Reflector



One-Piece Bowl Reflector

Cutter SOLOLUX Industrial Lighting Reflectors

Holder-Socket-Reflectors

"Easy to Wire"—Guaranteed Weather-Proof

Cutter Holder Socket Reflectors listed below are combinations of Sol-lux One-Piece Reflectors and Cutter Holder Sockets. Prices cover fixtures complete less the lamps. The Reflectors and Sockets are listed separately to permit of other combinations than those listed.

The following Holder Sockets are used with Sol-lux one-piece Reflectors—Medium Base Sockets are interchangeable with all reflectors for 200-watt or smaller lamps, and Mogul Base Sockets with all reflectors for 300-watt or larger lamps.

HOLDER SOCKETS FOR ONE-PIECE REFLECTORS

TRADE NUMBERS					Price Each
For 1/2-inch* Conduit	For 3/4-inch Conduit	With 4-inch Outlet Box Cover	With Cover for Condulet†		
30693	30694	30684	30685	Medium Screw Base	\$1.00
30772	30773	30980	30981	Mogul Screw Base	1.50

Complete Holder Socket Reflectors

With Cap for 1/2-Inch or 3/4-Inch Conduit
R L M STANDARD DOME TYPE

TRADE NUMBERS Consisting of:

Complete Unit For 1/2" Conduit	Complete Unit For 3/4" Conduit	Holder-Sockets For 1/2" Conduit	Holder-Sockets For 3/4" Conduit	One-piece Reflector	For Mazda Lamp Size	Diam. of Refr. Inches	Std. Pkg.	Price Each Complete Unit
30668	30747	30693	30694	306075	75	12	10 50	\$2.70
30669	30748	30693	30694	306150	100-150	14	10 60	2.90
30670	30749	30693	30694	306200	200	16	5 40	3.60
30671	30750	30772	30773	306500	300-500	18	5 50	4.40
30672	30751	30772	30773	306000	750-1000	20	3 45	5.90

STANDARD BOWL TYPE

30673	30752	30693	30694	307060	25-40-60	7 1/2	20 40	2.20
30674	30753	30693	30694	307075	75	8 1/2	10 35	2.35
30675	30754	30693	30694	307150	100-150	8 1/2	10 40	2.40
30676	30755	30693	30694	307200	200	10 1/2	10 45	2.90
30677	30756	30772	30773	307500	300-500	12 1/2	5 40	3.60
30678	30757	30772	30773	307000	750-1000	15 1/2	3 40	5.00

STANDARD ANGLE TYPE

30679	30758	30693	30694	304040	25-40	6 1/2	20 40	2.00
30680	30759	30693	30694	304060	60	8 1/2	10 35	2.45
30681	30760	30693	30694	304200	75-150-200	10 1/2	10 45	3.25
30682	30761	30772	30773	304500	300-500	12 1/2	5 40	4.75
30683	30762	30772	30773	304000	750-1000	15 1/2	3 40	6.40

Complete Holder Socket Reflectors

With Cover for Outlet Box or Condulet†

R L M STANDARD DOME TYPE

Consisting of:

Complete Unit For 4" Outlet Box	Complete Unit For Condulet	Holder Socket for Outlet Box	Holder Socket for Condulet†	One-Piece Reflector				
30948	30964	30684	30685	306075	75	12	10 50	2.70
30949	30965	30684	30685	306150	100-150	14	10 60	2.90
30950	30966	30684	30685	306200	200	16	5 40	3.60
30951	30967	30980	30981	306500	300-500	18	5 50	4.40
30952	30968	30980	30981	306000	750-1000	20	3 45	5.90

STANDARD BOWL TYPE

30953	30969	30684	30685	307060	25-40-60	7 1/2	20 40	2.20
30954	30970	30684	30685	307075	75	8 1/2	10 35	2.35
30955	30971	30684	30685	307150	100-150	8 1/2	10 40	2.40
30956	30972	30684	30685	307200	200	10 1/2	10 45	2.90
30957	30973	30980	30981	307500	300-500	12 1/2	5 40	3.60
30958	30974	30980	30981	307000	750-1000	15 1/2	3 40	5.00

STANDARD ANGLE TYPE

30959	30975	30684	30685	304040	25-40	6 1/2	20 40	2.00
30960	30976	30684	30685	304060	60	8 1/2	10 35	2.45
30961	30977	30684	30685	304200	75-150-200	10 1/2	10 45	3.25
30962	30978	30980	30981	304500	300-500	12 1/2	5 40	4.75
30963	30979	30980	30981	304000	750-1000	15 1/2	3 40	6.40

* Furnished with porcelain bushing for reinforced drop cord suspension when so ordered without additional charge.

† Furnished with cover for Crouse-Hinds Condulets, Series LO, CL, BO, BLMI, DSO and DSP. Specify type of Condulet when ordering.

SCHEDULE "H" DISCOUNTS



Holder-Socket-Reflector
R.L.M. Standard Dome Type



Holder-Socket-Reflector
Standard Bowl Type



Holder-Socket-Reflector
Standard Angle Type



Holder-Socket-Reflector
Standard Angle Type

Cutter SOLOLUX Industrial Lighting Equipment

Holder-Socket



Holder-Socket with Cap for Attachment to 1/2-inch Conduit.



Holder-Socket with 4-inch Outlet-Box Cover.



Holder-Socket with Porcelain Bushing for Reinforced Drop Cord Suspension.



First



Second

Only Two Operations Necessary for Installing Holder-Sockets Direct to Outlet-Box.



2 1/4-in. Single Screw Spring Wire Holder for Brass Shell Sockets.



Single Screw Spring Wire Holder for Porcelain Sockets, showing 2 1/4-in. Heel.

Holder-Sockets

The use of Cutter Holder-Sockets, which are combination holders for standard-heel reflectors and sockets for Mazda lamps, is an important factor in obtaining efficient illumination. The functions of Holder-Sockets, their simple construction and easy to wire features recommend them for installations where utility and efficiency are the determining factors.

Holder-Sockets are made with Cap for attachment to 1/2-inch and 3/4-inch conduit stems, with cover for attachment directly to outlet boxes and condulets, and with porcelain bushing for reinforced drop cord suspension. Holders are made for both 2 1/4-inch and 3 1/4-inch standard-heel reflectors.

Lamp Grips—Holder-Sockets are provided with lamp grips to insure perfect electrical connections and prevent the lamps loosening as a result of vibration. This feature is particularly important where the lamps are subjected to wind pressure; also in places where there is excessive vibration.

2 1/4-Inch Holder Sockets

With Keyless Porcelain Medium Screw Sockets

Trade No.		Std. Pkg.	Wt. Lbs. Std Pkg.	Price Each
30650	For 1/2-inch conduit attachment	20	30	\$1.25
30984	For 3/4-inch conduit	20	35	1.25
30651	With 4-inch outlet box cover	20	25	1.25
30982	With Cover for Crouse-Hinds Condulet †	20	25	1.25
30652	For drop-cord attachment	20	30	1.25

3 1/4-Inch Holder Sockets

With Keyless Porcelain Mogul Screw Sockets

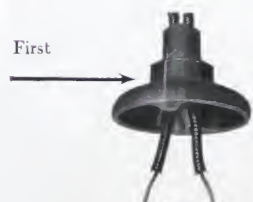
30654	For 1/2-inch conduit attachment	10	35	1.75
30985	For 3/4-inch conduit	10	35	1.75
30655	With 4-inch outlet box cover	10	30	1.75
30983	With cover for Crouse-Hinds Condulet †	10	30	1.75
30656	For drop cord attachment	10	35	1.75

2 1/4-Inch Spring Wire Holders

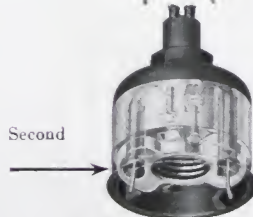
Single screw spring wire holders are made for use with porcelain and brass shell sockets and for 2 1/4-inch standard-heel reflectors only.

30986	For brass shell sockets	100	7	.18
30987	For porcelain sockets	100	7	.18

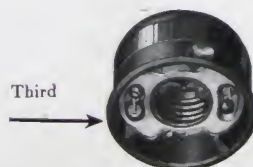
† Furnished with cover for Crouse-Hinds Condulets, series LO, CL, BO, BLM, DSO and DSP. Specify type of conduit when ordering.



First



Second



Third

Only three Operations Necessary for Wiring Holder-Sockets for Attachment to Conduit

SCHEDULE "H" DISCOUNTS

Cutter **SOLOLUX** Industrial Lighting Reflectors

With 2¼-inch and 3¼-inch Standard Heels

One of the principal advantages of standard-heel reflectors is that different types of reflectors with the same size of heel may be used with the same holder, which permits changes in light distribution without disturbing the wiring. Another advantage is that reflectors may be removed easily for cleaning. The 2¼-inch heel is supplied on reflectors for 200-watt lamps and smaller, and the 3¼-inch heel on reflectors for 300-watt lamps and larger. Standard-heel reflectors used with Cutter Holder-Sockets are recommended for conduit, outlet box, and reinforced drop-cord installations. Single Screw Spring Wire Holders may be used for attaching 2¼-inch standard-heel reflectors to brass-shell or porcelain sockets.



Standard 2¼-inch Heel Showing Methods of Suspension

R L M Standard Dome Type

Porcelain Enamel, White Interior, Green Exterior

Trade No.	For Mazda Lamp Size	Diam. Inches	Depth Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
326075	75	12	5½	15	40	\$1.55
326150	100-150	14	6½	15	50	1.85
326200	200	16	7¾	10	45	2.15
336500	300-400-500	18	7¾	5	25	3.00
336000	750-1000	20	10¼	3	25	4.40



R L M Standard Dome Type

Standard Bowl Type

Porcelain Enamel, White Interior, Green Exterior

327060	25-40-60	7¼	4¾	50	50	.95
327075	75	8½	5¾	20	35	1.10
327150	100-150	8½	6¼	20	35	1.15
327200	200	10½	7	20	35	1.70
337500	300-400-500	12½	7½	10	30	2.35
337000	750-1000	15¼	10¾	5	35	3.35



Standard Bowl Type

Enam-aluminum Interior, Green Baked Paint Exterior

227060	25-40-60	7¼	5¼	50	50	.70
227075	75	8½	6¼	40	50	.85
227150	100-150	8½	7¼	39	50	.87
227200	200	10½	8	15	30	1.30

Standard Angle Type

Porcelain Enamel, White Interior, Green Exterior

324040	25-40	6¾	5½	50	40	1.15
324060	60	8	6¾	30	40	1.30
324200	75-100-150-200	10½	9¼	20	40	1.95
334500	300-400-500	12¼	11½	5	20	3.55
334000	750-1000	15¼	15½	3	30	5.25



Standard Angle Type

Enam-aluminum Interior, Green Baked Paint Exterior

224040	25-40-50	6¾	5½	50	40	.47
224060	60	8	6¾	40	40	.70
224150	75-100-150-200	10½	9¼	20	35	1.20

Focusing Type

Enam-aluminum Interior, Green Baked Paint Exterior

225040	25-40	6¾	4¾	50	40	.47
225060	60	8½	5	50	40	.70
225150	75-100-150	10	7¼	20	35	1.10



Focusing Type

SCHEDULE "H" DISCOUNTS

Cutter SOLUX Industrial Lighting Reflectors

With Snap-Ring Holders for Brass-Shell Sockets

And with Single-Screw Spring Wire Holders for Porcelain Sockets

The snap-ring holder forms an easy and dependable method of attaching reflectors to brass-shell sockets. When attaching the snap-ring holder to the socket, the socket shell is placed over the reflector at an angle. The snap-ring is expanded to let the bead of the socket shell slip into the groove in the snap-ring, and the tension holds the reflector firmly in place. The snap-ring holder is substantial in construction and positive in operation. Reflectors are furnished with the clamp strap shown in the accompanying illustration.



Snap-Ring Holder with Clamp Strap for Brass Shell Socket



2 1/4 inch Standard Heel With Spring Wire Holder for Porcelain Socket

Reflectors for porcelain sockets consist of reflectors with standard 2 1/4-inch heels as listed on the preceding page, with single screw spring wire holder which may be quickly attached to the socket and the reflector when it is being installed.

R L M Standard Dome Type

Porcelain Enamel, White Interior, Green Exterior



R. L. M. Standard Dome Type

Trade For Brass Shell Socket	Numbers For Porcelain Socket	For Mazda Lamp Size	Diam. Inches	Depth Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each For Brass Shell Socket	Price Each For Porcelain Socket
316075	366075	75	12	5 7/8	15	40	\$1.65	\$1.73
316150	366150	100-150	14	6 7/8	15	40	1.95	2.03
316200	366200	200	16	8 1/8	10	45	2.25	2.33

Standard Bowl Type

Porcelain Enamel, White Interior, Green Exterior



Standard Bowl Type

317060	367060	25-40-60	7 1/4	5	50	50	1.05	1.13
317075	367075	75	8 1/4	6	20	35	1.20	1.28
317150	367150	100-150	8 1/4	6 1/2	20	35	1.25	1.33
317200	367200	200	10 1/2	7 1/4	20	35	1.80	1.88

Enam-aluminum Interior, Green Baked Paint Exterior

211060	267060	25-40-60	7 1/4	5 1/2	50	40	.80	.88
211075	267075	75	8 1/4	6 1/2	20	35	.95	.93
211150	267150	100-150	8 1/4	7 1/2	20	35	.97	1.05
211200	267200	200	10 1/2	8 1/4	20	35	1.40	1.48

Standard Angle Type

Porcelain Enamel, White Interior, Green Exterior



Standard Angle Type

314040	364040	25-40	6 3/4	5 3/4	50	40	1.25	1.33
314060	364060	40-60	8	7	30	40	1.40	1.48
314200	364200	75-100-150-200	10 1/8	9 1/2	20	40	2.12	2.20

Enam-aluminum Interior, Green Baked Paint Exterior

214040	264040	25-40	6 3/4	5 3/4	50	40	.57	.65
214060	264060	40-60	8	7	40	40	.80	.88
214200	264200	75-100-150-200	10 1/8	9 1/2	20	35	1.37	1.45

Focusing Type

Enam-aluminum Interior, Green Baked Paint Exterior



Focusing Type

215040	265040	25-40	6 5/8	4 1/2	50	35	.57	.65
215060	265060	60	8	5 1/4	40	40	.80	.88
215150	265150	75-100-150	10	7 3/8	20	35	1.20	1.28

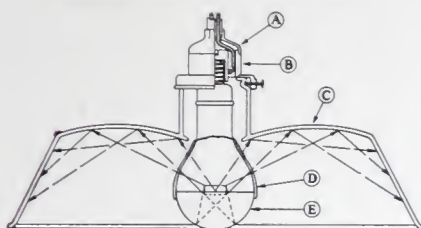
SCHEDULE "H" DISCOUNTS

Reflecto-Cap-Diffusers

The Reflecto-Cap-Diffuser consists of a steel reflector (finished with green porcelain-enamel on the outside, and white porcelain-enamel on the inside), and a silver-plated cap, highly polished on the inside, and provided with a wire holder for attaching it to the bulb of a Mazda "C" Lamp.



Reflecto-Cap-Diffuser Assembled



Cross-Section of Reflecto-Cap-Diffuser
A, 1/2-inch Cap; B, Holder-Socket; C, Porcelain
Enamel Reflector; D, Wire Spring Holder
for Cap; E, Cap Silver-plated on Inside

Cutter "Sol-lux" bowl and dome types of reflectors are suitable for widespread use in mills and factories, and the Reflecto-Cap-Diffuser is not intended to supplant them for general factory lighting. But where illumination of high intensity is required for detailed and accurate workmanship, or where materials with polished or oily surfaces offer special danger from reflected glare, the Reflecto-Cap-Diffuser should be installed. The units should be spaced not to exceed one and two-thirds times their height from the working plane.

Direct glare is eliminated by the Reflecto-Cap-Diffuser by means of the silver-plated cap which covers the lower part of the bulb of the lamp. This cap conceals the filament and directs the rays of light to the large reflector above. The light is distributed evenly over the entire surface of the reflector, so that it is possible to view the unit from any direction without discomfort to the eyes. The size and shape of the reflector has been scientifically determined to give a thorough diffusion of light, and thus eliminate reflected glare from shiny objects in the working plane. The net result of illumination with this system is that the eyes can perform their tasks at all times without any discomfort, because all objects are evenly and softly illuminated.



Parts of Reflecto-Cap-Diffuser, Showing Reflector
Holder Socket and Silver-plated Cap

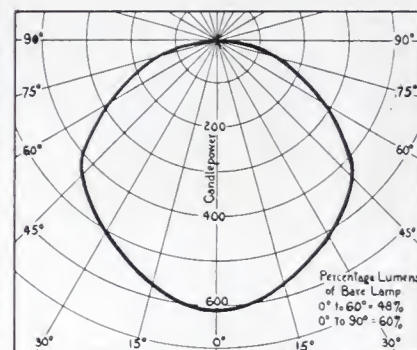


Diagram Showing Distribution of Light
from the Reflecto-Cap-Diffuser

Reflecto-Cap-Diffusers

Trade No.	Description	Dimensions in Inches		Packing		List Price Each
		Diameter	Depth	Number in Std. Pkg.	Approx. Lbs. Shp. Wt.	
For 75-watt	Complete Unit: Reflector, Holder Socket, Metal Cap with Spring Wire	17	8 3/4	10	50	\$5.10
MAZDA C	30646 Enameled Steel Reflector.....	17	5 3/4	10	30	2.90
Lamps	30647 Holder-Socket.....	2 1/4 Fitter	3 5/8	20	20	1.25
	30648 Lamp Cap with Spring Wire Holder.....	2 3/4	1 5/16	80	..	.95
For 100-watt	Complete Unit: Reflector, Holder Socket, Metal Cap with Spring Wire	17	9 1/4	10	55	5.60
MAZDA C	30649 Enameled Steel Reflector.....	17	5 3/4	10	30	2.90
Lamps	30647 Holder-Socket.....	2 1/4 Fitter	4 1/8	20	30	1.70
	30657 Lamp Cap with Spring Wire Holder.....	3 1/8	1 1/2	80	..	1.00
For 150-watt	Complete Unit: Reflector, Holder Socket, Metal Cap with Spring Wire	21	9 1/4	4	45	7.10
MAZDA C	30658 Enameled Steel Reflector.....	21	6 3/8	4	35	4.50
Lamps	30660 Holder-Socket.....	3 1/4 Fitter	3 1/2	20	30	1.60
	30659 Lamp Cap with Spring Wire Holder.....	3 1/8	1 1/2	80	..	1.00
For 200-watt	Complete Unit: Reflector, Holder Socket, Metal Cap with Spring Wire	21	10	4	45	7.20
MAZDA C	30662 Enameled Steel Reflector.....	21	6 3/8	4	35	4.50
Lamps	30660 Holder-Socket.....	3 1/4 Fitter	4 1/4	20	30	1.60
	30663 Lamp Cap with Spring Wire Holder.....	3 3/4	1 3/4	80	..	1.10
For 300-watt	Complete Unit: Reflector, Holder Socket, Metal Cap with Spring Wire	21	11 7/8	4	50	7.90
MAZDA C	30665 Enameled Steel Reflector.....	21	6 3/8	4	35	4.50
Lamps	30666 Holder-Socket.....	3 1/4 Fitter	6 1/8	20	45	2.00
	30667 Lamp Cap with Spring Wire Holder.....	4 3/8	2 1/16	80	..	1.40

SCHEDULE "H" DISCOUNTS

Cutter SOLOLUX Vapor Proof Fixtures

With Easy-to-Wire Holder Sockets Approved Constructions



Vapor-Proof Fixture with Ball Globe



Vapor-Proof Fixture with Pear Shape Globe and Guard



Vapor-Proof Fixture with Concentric Type Reflector and Pear Shape Globe



Vapor-Proof Fixture with Deep Dome Type Reflector and Ball Globe



Sectional View of Vapor-Proof Fixture with Bowl Type Reflector and Pear Shape Globe

Sol-lux Vapor proof fixtures are safety first units of the highest class. They are designed for use in plants where explosive gases and dust accumulating in the standard types of industrial lighting fixtures would cause explosions and fires and where moisture and smoke fumes would hasten corrosion of exposed metal parts.

Each fixture uses the well-known Cutter Holder Socket, approved by the National Board of Underwriters. This socket is easy to wire and is provided with lamp grips to insure perfect electrical connections and prevent the lamps from loosening when the fixture is subjected to vibration. The cap and globe holder are made of cast iron, heavily galvanized and painted. They will not corrode under the most severe service conditions. Special gaskets are used in all joints to make the fixtures tight. Fixtures may be used with or without lamp guards. Prices below include clear glass globe but not lamp or wiring.

Trade Numbers			With Globe Only		Ship. Wt.		Price Each
For 1/2" Pipe	For 3/4" Pipe	Outlet Box Cover†	Size of Reflector	For Lamp Sizes	Diam. of Globe*	Std. Pkg.	
30774	30788	30910		25-40-60	5 Ball, Clear	10 15	\$2.50
30775	30789	30911		75-100-150	5 Ball, Clear	10 20	3.00
30776	30790	30912		200	5x6 Pear, Clear	5 25	3.50
30777	30791	30913		300-400-500	8 Ball, Clear	3 30	4.85

With Deep Dome Reflector

30778	30792	30914	12	75	5" Ball, Clear	10 25	4.90
30779	30793	30915	14	100-150	5" Ball, Clear	10 30	5.25
30780	30794	30916	16	200	5x6" Pear, Clear	5 35	6.00
30781	30795	30917	18	300-500	8" Ball, Clear	3 40	8.00

With Bowl Reflector

30782	30796	30918	10 1/2	75-100	5" Ball, Clear	10 25	4.75
30783	30797	30919	10 1/2	200	5x6" Pear, Clear	5 30	5.10
30784	30798	30920	15	300-500	8" Ball, Clear	3 35	7.10

WITH CONCENTRIC REFLECTOR

30785	30799	30921	14"	75	5" Ball, Clear	10 30	4.25
30786	30800	30922	16"	100-150	5" Ball, Clear	10 35	5.35
30787	30909	30923	18"	200	5x6" Pear, Clear	5 40	6.50

LAMP GUARDS—HEAVILY TINNED

Trade No.	Diameter	Depth	For Fixtures Nos.
30924	5 1/2	5	30774, 5, 8, 9, 82, 5, 6, 8, 9, 92, 3, 6, 99, 800, 910, 1, 4, 5, 8, 21, 22, 1.00
30925	6 1/2	7	30776, 80, 3, 7, 90, 4, 7, 909, 12, 6, 9, 23, 1.25
30926	8 1/2	8	30777, 81, 4, 91, 5, 8, 30913, 7, 20, 1.75

*Extra globes will be furnished at the following list prices: No. 30764, 5-inch Ball, Clear, \$1.00; No. 30763, 5-inch Ball, Ruby, \$2.00; No. 30765, 5-inch x 6-inch Pear, Clear, \$2.00; No. 30765, 8-inch Ball, Clear, \$3.00.

†These fixtures will be furnished when so specified (without additional charge) for Crouse-Hinds Condulets, Series LO, CL, BO, BLM DSO, and DESP. Specify type of Condulet when ordering.

SCHEDULE "H" DISCOUNTS

Cutter **SOLOLUX** Industrial Lighting Equipment

Reflectors—**SOLOLUX** Fixtures—Lamp Accessories—Suspensions

Holder-Socket-Reflectors—One-Piece

Shallow Dome Type, Porcelain Enamel

Trade Numbers	For 1/2-inch Conduit	For 3/4-inch Conduit	For Mazda Lamp Size	Diam. Inches	Depth Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
30691	30770		25-60	12 1/4	6 3/4	20	60	\$2.60
30692	30771		75-150	15 1/4	8 5/8	15	70	2.90
Concentric Type—Porcelain Enamel								
30688	30767		25-75	14	5 1/8	20	65	\$2.70
30689	30768		100-150	16	5 1/2	15	75	3.05
30690	30769		200	18	6 1/8	10	70	3.50

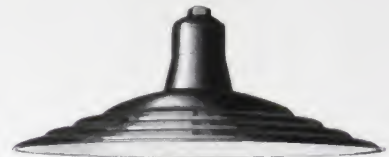


Holder-Socket-Reflectors—Shallow Dome Type

Shallow Dome Refletors

Porcelain Enamel, With 2 1/4-Inch Standard Heel

Trade Numbers	For Mazda Lamp Size	Diam. Inches	Deth Inches	Std. Pkg.	Wt., Lbs. Std. Pkg.	Price Each
323040	25-40-50	10 1/4	3 7/8	30	55	\$0.95
323060	40-60	12 1/4	4 1/4	20	45	1.05
323075	75	12 1/4	5	20	45	1.35
323150	100-150-200	15 1/4	6 1/8	5	60	2.00



Holder-Socket-Reflectors—Concentric Type

Baked Paint Enamel, With Snap-Ring Holder for Brass-Shell Sockets

With Single Screw Spring Wire Holder for Porcelain Sockets

For Brass Shell Socket	For Porcelain Socket	For Mazda Lamp Size	Diam. Inches	Depth Inches	Std. Pkg.	For Brass Shell Socket	For Porcelain Socket	Price Each
113020	163020	20	8	3 1/2	40	50	\$0.65	\$0.73
113040	163040	25-40-50	10 1/4	4 1/4	20	40	.70	.78
113060	163060	40-60	12 1/4	4 5/8	20	35	.85	.93
113075	163075	75	12 1/4	5 3/8	15	35	.90	.98
113150	163150	100-150-200	15 1/4	6 1/2	10	35	1.20	1.28



Sol-lux Fixtures



Sol-lux Glass Lamp Cap

SOL-LUX GLASS LAMP CAPS WITH SPRINGS

Trade Numbers	For Mazda Lamp Size	Std. Pkg.	Wt., Lbs. Each	Price Each
30695	75	48		\$0.65
30696	100-150	48		.70
30697	200	48		.75
30698	300	36		.90
30699	400-500	36		1.00

SOLOLUX Fixtures with Glassware

Porcelain Enameled-Steel—For 1/2-Inch Conduit

Trade Numbers	Description	Std. Pkg.	Wt., Lbs. Each	Price Each
30452	6-in. Hldr. 10-in. Acorn Globe Medium Sc. Socket	12	13	\$5.45
30453	6-in. Hldr. 8-in. Stalactite Medium Sc. Socket	12	12	4.70
30456	8-in. Hldr. 12-in. Acorn Globe Mogul Sc. Socket	12	17	7.15
30518	6-in. x 15-in. Reflector, Porc. En. extra		7	1.25
30519	8-in. x 18-in. Reflector, Porc. En. extra		8	2.00



Pole Plate



Corner Plate



Suspension Eye

Goosenecks and Fittings

Trade Numbers	Description	Std. Pkg.	Wt., Lbs. Each	Price Each
21365	3-foot Gooseneck of 1/2-inch pipe, paint enameled	200	2 3/8	\$0.50
21366	4-foot Gooseneck of 1/2-inch pipe, paint enameled	150	3 1/8	.65
21443	4-foot Gooseneck of 3/4-inch pipe, paint enameled	150	4 3/8	.90
21487	Grooved Poleplates for 1/2-inch pipe, paint enameled	125	1 1/4	.30
21438	Grooved Poleplate for 3/4-inch pipe, paint enameled	400	2 1/4	.40
31488	Wall Flange, threaded for 1/2-inch pipe, paint enameled	400	1	.20
21489	Same, to slip over 1/2-inch pipe, paint enameled	500	1	.30
21490	Wall Flange threaded for 3/4-inch pipe, paint enameled	500	2	.30
21491	Same, to slip over 3/4-inch pipe, paint enameled	400	2	.40
21492	Corner Plate for 1/2-inch pipe, paint enameled	400	2 1/2	.70
21493	Same, for 3/4-inch pipe, paint enameled	300	2 1/2	.80
30195	Cast Iron Suspension eye, paint enameled with 1/2-inch nipple	12	2	\$0.60
30196	Same, galv. and painted	12	2	.70
30029	Cast Iron insulated Suspension Ring, paint enameled, with 1/2-inch nipple	12	2	.70
30030	Same, Galvanized and painted	12	2	.80



1/2-inch x 4 foot Gooseneck with Grooved Pole Plates



1/2-inch x 4 foot Gooseneck with Wall Flange

SCHEDULE "H" DISCOUNTS

Cutter Automatic Cut-Out Hangers and Reflectors



Cutter Automatic Cut-Out Hanger with 1/2-inch Male Thread Fitting (Showing Pipe Suspension)



Showing Cable Suspension



Showing Ceiling Suspension



Midget Changeable Pulley

Cutter Automatic Cut-Out Hanger for Multiple Circuits With Universal Suspension Clamp

The efficiency of reflectors is greatly reduced if they are not kept clean. Reliable tests show that on the average, the loss of light amounts to nearly 50 per cent of that which is available when the reflectors are kept clean. Cutter Automatic Cut-Out Hangers facilitate cleaning reflectors without the use of ladders, thus saving much time and expense with absolute protection against accidental short circuits or contact with live wires. A pull on the rope disconnects the fixture from the circuit. It is then lowered to the floor for renewing lamps and cleaning. A pull on the rope raises the fixture to burning position where it is automatically locked in place and supported independently of the hoisting rope.

This hanger may be used with Angle type reflectors and other fixtures requiring a fixed location. The position of the lower switch is always the same with respect to the upper part of the pulley.

The Universal Suspension Clamp furnished with this device, may be used for fastening the hanger to ceiling or on cable, or on a pipe bracket of 3/4-inch to 1 1/4-inch bore. With this hanger use Cutter Midget Changeable Pulley and 3/16-inch or 1/4-inch Weatherproof Cord, or 1/4-inch galvanized Ebony wire rope. See schedule "F" lists and discounts.



Cutter Automatic Cut-Out Hanger with Holder-Socket-Reflector (R L M Standard Dome Type)



Cutter Automatic Cut-Out Hanger with Holder-Socket-Reflector (Standard Angle Type)

PRICE LIST—AUTOMATIC CUT-OUT HANGERS

PRICES DO NOT INCLUDE WIRING

Trade No.		Std. Pkg.	Shpg. Wt. Each	Price Each
30941	With 1/2-inch Male Thread Fitting...	10	20	\$ 5.25
30942	With 3/4-inch Male Thread Fitting...	10	20	5.35
30943	With Sister Hook below...	10	20	5.55
30944	With Medium Screw Holder Socket for 2 1/4-inch Standard Heel Reflectors.	10	22	6.50
30945	With Mogul Screw Holder Socket for 3 1/4-inch Standard Heel Reflectors...	10	22	7.00

CUTTER AUTOMATIC CUT-OUT REFLECTORS

Fixtures listed below are combinations of Cutter Holder-Socket-Reflectors and Cut-Out Hanger No. 30941. These fixtures are complete ready to be installed and wired. Prices do not include lamps or wiring. Other combinations will be furnished when so ordered.

WITH R. L. M. STANDARD DOME TYPE REFLECTORS

Trade No. Complete	Hanger No.	Reflector No.	Size Lamp	Std. Pkg.	Shpg. Wt. Std. Pkg.	Price Each
30927	30941	30668	75	20	400	\$ 7.95
30928	30941	30669	100-150	10	200	8.15
30929	30941	30670	200	10	200	8.85
30930	30941	30671	300-500	5	125	9.65
30931	30941	30672	750-1000	3	75	11.15

WITH STANDARD BOWL TYPE REFLECTORS

30932	30941	30674	75	20	400	7.60
30933	30941	30675	100-150	10	200	7.65
30934	30941	30676	200	10	200	8.15
30935	30941	30677	300-500	5	125	8.85
30936	30941	30678	750-1000	3	75	10.25

WITH STANDARD ANGLE TYPE REFLECTORS

30937	30941	30681	75-100-150-200	10	200	8.50
30938	30941	30682	300-400-500	5	125	10.00
30939	30941	30683	750-1000	3	75	11.65

WITH CONCENTRIC TYPE REFLECTORS

30940	30941	30688	25-75	20	400	8.00
-------	-------	-------	-------	----	-----	------

WITH SHALLOW DOME TYPE REFLECTORS

30946	30941	30692	75-150	10	200	8.15
-------	-------	-------	--------	----	-----	------

MIDGET CHANGEABLE PULLEY

A weather proof pulley with a universal clamp which will grip any standard size of suspension wire or cable. By taking out the two bolts, the clamp can be opened out so as to form a plate, which fits the wall, ceiling, girder, or the curved surface of a pole. May be used with 1/2-inch or smaller rope.

Trade No.	Description	Std. Pkg.	Wt. Lbs. Each	Price Each
20415	Midget Changeable Pulley	100	2 1/2	\$0.70

When ordered with standard packages of Hangers and Cut-Out Reflectors the same discounts will apply.

SCHEDULE "H" DISCOUNTS

